

In the Claims

Claims 1-11 (cancelled).

Claim 12 (currently amended): A method for conditioning a surface of a polishing pad after chemical-mechanical polishing of a semiconductor substrate with the polishing pad surface, comprising:

providing an apparatus which includes a steam outlet port proximate a conditioning stone;

positioning the polishing pad with the polishing pad surface against the conditioning stone and displacing the polishing pad relative to the condition conditioning stone to rub the polishing pad surface with the condition conditioning stone; and

flowing steam material through the steam outlet port and across the polishing pad surface as the polishing pad surface is rubbed with the conditioning stone; the material flowing through the steam outlet port containing steam, and an entirety of the material flowing through the steam outlet port being in vapor phase.

Claim 13 (currently amended): The method of claim 12 wherein the steam is jetted onto the polishing pad surface to impact the polishing pad surface with a pressure of from about 10 psig to about 20 psig.

Claim 14 (currently amended): The method of claim 12 wherein the steam has a temperature of at least about 200°F as it flows through the steam outlet port.

Claim 15 (currently amended): The method of claim 12 wherein the steam has a temperature of at least about 200°F as it flows through the steam outlet port, and wherein the steam impacts the polishing pad surface with a pressure of from about 10 psig to about 20 psig.

Claim 16 (currently amended): The method of claim 12 wherein ammonium is within the steam during the exposure of the polishing pad surface to the steam.

Claim 17 (currently amended): The method of claim 12 wherein ammonium citrate is within the steam during the exposure of the polishing pad surface to the steam.

Claim 18 (currently amended): The method of claim 12 wherein the chemical-mechanical polishing utilizes the polishing pad to polish a copper-containing material; and wherein ammonium is within the steam during the exposure of the polishing pad surface to the steam.

Claim 19 (currently amended): The method of claim 12 further comprising:  
removing the polishing pad surface from against the conditioning stone to complete the conditioning of the polishing pad surface with the conditioning stone; and after the conditioning of the polishing pad surface with the conditioning stone is completed, exposing the polishing pad surface to additional steam.

Claim 20 (currently amended): A method for chemical-mechanical polishing of a semiconductor substrate with a polishing pad surface and reconditioning the polishing pad surface, comprising:

providing a semiconductor substrate having a surface which is to be chemical-mechanical polished;

providing a polishing pad proximate the semiconductor substrate surface and utilizing a surface of the polishing pad to chemical-mechanical polish the semiconductor substrate surface;

providing an apparatus which includes a steam outlet port proximate a conditioning stone;

positioning the polishing pad with the polishing pad surface against the conditioning stone and displacing the polishing pad relative to the conditioning stone to rub the polishing pad surface with the conditioning stone; and

flowing steam material through the steam outlet port and across the polishing pad surface as the polishing pad surface is rubbed with the conditioning stone; the material flowing through the steam outlet port containing steam, and an entirety of the material flowing through the steam outlet port being in vapor phase.

Claim 21 (currently amended): The method of claim 20 wherein the steam is jetted onto the polishing pad surface from a plurality of nozzles generating overlapping spray patterns of the steam.

Claim 22 (currently amended): The method of claim 20 wherein the steam is jetted onto the polishing pad surface from a plurality of nozzles generating overlapping spray patterns of the steam; and wherein the nozzle spray patterns are fans in which the steam impacts the polishing pad surface at angles of from 0° to 45°.

Claim 23 (currently amended): The method of claim 20 wherein the steam is jetted onto the polishing pad surface from a plurality of nozzles.

Claim 24 (currently amended): The method of claim 20 wherein the steam is jetted onto the polishing pad surface to impact the surface with a pressure of from about 10 psig to about 20 psig.

Claim 25 (currently amended): The method of claim 20 wherein ammonium is within the steam during the exposure of the polishing pad surface to the steam.

Claim 26 (currently amended): The method of claim 20 wherein ammonium citrate is within the steam during the exposure of the polishing pad surface to the steam.

Claim 27 (currently amended): The method of claim 20 wherein the semiconductor substrate comprises a copper-containing material at the surface which is chemical-mechanical polished; and wherein ammonium is within the steam during the exposure of the polishing pad surface to the steam.

Claim 28 (currently amended): The method of claim 20 further comprising:

removing the polishing pad surface from against the conditioning stone to complete the conditioning of the polishing pad surface with the conditioning stone; and  
after the conditioning of the polishing pad surface with the conditioning stone is completed, exposing the polishing pad surface to additional steam.

Claims 29-35 (canceled).